Preface

The LCES Workshop is a direct response to the tragic loss of life on wildland fires. Particulary, the Dude and Storm King Mountain fires. Firefighting agencies, their supervisors and administrators, all feel deeply responsible when anyone gets hurt on the job. Historically, we decide to bite the bullet and commit 100% to fireline safety. Then another layer of rules and procedures is added to the mix.

Paul Gleason first alterted us the the problem we are creating and introduced the LCES concept. Ted Putnam's research into cockpit studies further focuses our attention on the fact that we can only manage a surprisingly small number of elements during normal operations, and fewer when the situation becomes intense. Ted also makes us aware of the trap of incremental changes where small acceptable changes in our environment slowly add up to a situation we would not accept if it were encountered initially. (A more detailed history is included in the Appendix).

While preparing for Spring 1996 <u>Standards for Survival</u> training for Region One Smokejumpers, Ken Heare, Paul Fieldhouse, and Paul Chamberlin hit upon the employee written contract concept used in the workshop, as well as the review of <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u>, and <u>Denominators</u> focusing attention towards LCES. Paul Fieldhouse and Todd Onken wrote the original scenarios, and Paul Chamberlin typed the draft lesson plan.

The smokejumper refresher sessions went fairly well and revealed additional opportunites and the need for fine tuning. Asked to present the workshop to the Gila National Forest all-Forest guard school in May, smokejumpers had an opportunity to see it's effectiveness for entry level as well as seasoned firefighters.

By fall a diverse review panel was in place with:

John Murray	Blackfeet Community College
Diane Hutton	Beaverhead-Deer Lodge National Forest
Paul Gleason	Arapahoe-Roosevelt National Forest
Joe Stutler	Region 6, Operations/Safety
Paul Laisy	Missoula Rural Fire District

J.P. Harris L.A. County Fire Department

Steve Karkanen Lolo Hotshots

Nelda St. Clair-Vorce Bureau of Land Management, Montana

State Office. Nelda has been a partner in the

development of the LCES Workshop.

Special thanks go to the following individuals for their support and insight into the development of the LCES Workshop:

Robert J. Collins State Fire Management Officer, Montana BLM

Tom Harbour Director Fire and Aviation, Region Four

Tom Boatner Alaska Fire Service
Jim Stires Bureau of Indian Affairs

James Grant Northern Training Center Manager, Region One

Paul Broyles National Park Service

Dave Custer Missoula Smokejumper Base Manager Rick Hafenfeld Interior Fire Operations Specialist

Kevin Hull State Fire Management Officer, Nevada BLM

By supporting this program, we are demonstrating a commitment to:

"DO BASIC THINGS VERY WELL"

CONTENTS

Preface	
Contents	
Introduction	
Course Inst	ructions
Unit 1	Focusing on LCES
Unit 2	Developing the LCES Contract
Unit 3	Scenario Exercises
	Lesson A - Analysis of Scenario Exercises
	Lesson B - <u>Orders</u> , <u>Situations</u> , <u>Guidelines</u> , and <u>Denominators</u> Review
	Scenario A - Smokejumper Small Fire
	Scenario B - Firefighter/Crew Boss Large Fire
	Scenario C - Urban Interface Exercise
	Scenario D - Engine Scenario - Blunt Fire Initial Attack
	Scenario E - Prescribed Fire

Appendices

Appenix A Handout Masterws (Units 1, 2)

(Scenario Handouts are included with

each scenario)

Appendix B Viewgraphs

Appendix C Instructor References, Techniques

and Sample Contracts

Appendix D Course Evaluation

Appendix E CD ROM (Slides)

LCES Workshop - Introduction

Ownership, Consensus, Engagement, Acknowledgement, and **Do Basic Things Very Well.** These are the building blocks and core values behind the LCES Workshop. Beginning with acknowledgment, let's start with some important assumptions. Let's acknowledge that people are smart and that people demonstrate greater commitment when they are participants in the plan. Let's also agree that LCES enhances and focuses the Ten Standard Firefighting Orders, the Eighteen Situations That Shout Watch Out, The Downhill Line Construction Guidelines, and The Common Denominators of Tradgey Fires.

In the LCES Workshop, participants utilize the vast experience among our ranks as well as the fresh and unbiased insights of new employees. In small groups, participants first review the Standard Orders, Situations, Guidelines, and Denominators in an exercise designed to focus attention on LCES.

A brief concession is in order. While lookouts have been the cornerstone of our safety program for years, few if any of us have received specific training or can cite accepted quality lookout standards. Communications, Escape Routes, and Safety Zones are in the same boat. The LCES Workshop sees this shortcoming in our safety training as an opportunity.

Participants become engaged in the process of designing their own safety program. The small groups will discuss and develop the L, C, E, and S, creating a list of performance standards. The entire class will then work together to produce and edit a **contract**, based on **consensus**, which guide **performance**. With this type of ownership, we see greater levels of **compliance** in the field.

Instructors are more facilitators who guide rather than lecture; however, a "schoolbook solution" is provided to insure contracts do not miss critical elements. Notice that one crew's SOP will be slightly different from another's. This lack of uniformity will be compensated by higher levels of compliance, and increased dialogue.

Scenarios are utilized to reinforce this carefully crafted contract. The instructor may choose one or more of the exercises provided with this course, or choose to develop unique situations based on local needs. While the original impetus for the workshop arises from the wildfire community, LCES is applicable in nearly all hazardous operations. Additional checklists/guidelines have been included in Unit 1 such as Oregon Division of Forestry "NAILS" and "Urban Interface Watch Out Situations."

To keep required annual training fresh and engaging, consider using the <u>LCES Workshop</u> in rotation with <u>Standards for Survival</u>. After <u>Standards</u> the first year, use Units 1 and 2 the next and Unit 3 the third year. Having given <u>Standards</u> a break, start the cycle again with <u>Standards</u> in the fourth year. An additional review of <u>Orders</u> and <u>Situations</u> is included in Unit 3 to insure compliance with all refresher standards.

A thorough fire shelter review and practice deployment is required annually. The time required for fire shelter deployment practice has proven a convenient time to print and copy the contract, ready to distribute before people leave the session.

LCES Workshop Instructions

I. Instructor Prerequisite

The instructional format for the LCES Workshop differs from traditional courses in that the instructor(s) role is more that of a facilitator. While the course needs to be introduced and text is presented in the Communications portion of Unit 2, the instructor will mostly guide groups through a process. The process is designed to capitalize on the wisdom and experience within the firefighting community and help organize what we already know.

Instructors need to be knowledgeable in fire scene operations (or whatever risk), have the ability to facilitate and be an enthusiastic supporter of the workshop process. Instructors must recognize the positive effect in ownership of a consensus derived product.

In addition, Unit 2 will require the service of a "Scribe", someone to capture items on a laptop computer with a projector, print, copy and distribute the final contract.

And most important, keep in mind the ultimate goals inspiring the LCES Worshop. Our vision is to move the entire firefighting community to where Lookouts, Communications, Escape Routes, and Safety Zones are deeply engrained and professionally practiced every time. In addition, we demonstrate an interactive process promoting open and respectful communication, up and down the chain of command.

II. Trainee Target Group

Targeted are entire groups of individuals that are likely to work together. Trainees need to represent the broad spectrum of individuals involved in the hazardous tasks including the highly experienced, the inexperienced, supervisors, and dispatchers.

The participation of line managers emphasizes the agency commitment and levels the playing field when safety is an issue. Administrators not fluent in the hazardous missions learn a concise structure to evaluate operations for which they are responsible.

Classes generally include twenty individuals or more, with eight tables of five individuals ideal. A group of ninety people is possible if people are asked to use discretion and avoid repetition.

Pay close attention when forming the small groups:

- -disperse social groups.
- -keep number of experienced and inexperienced people even.
- -distribute functional areas as evenly as possible (i.e., do not have three dispatchers in one group and none at the other tables).
- -if participants are from a variety of agencies and backgrounds, ensure even distribution.
- -Counting off is an effective means to get started, but a quick adjustment and the reseating of a few individuals is often necessary.

III. Trainee Pre-requisites

A broad mix of backgrounds and experience is desirable. This workshop serves a variety of groups, crews, supervisors and support personnel.

It is helpful for students to have read "Findings from the Wildland Firefighter's Human Factors Workshop" (9551-2855-MTDC).

IV. Time Element

1. Presentation Time

Unit 1 and Unit 2 require approximately five hours to present plus time to print, copy and distribute the final contract.

Unit 3 consists of scenario exercises which range in lenght from one hour to over two hours. Considerable flexibility allows instructors to determine the amount of discussion time. One option is to present the scenarios the following season along with a contract review, preceded by the provided **Orders** and **Situations** review (Unit 3, Lesson A).

2. Preparation Time

Allow approximately six hours to read the material, photocopy and prepare the room. In addition, allow time to read "Findings From the Wildland Firefighter's Human Factors Workshop" (9551-2855-MTDC).

V. Course Objectives

1. Field Performance Objectives

Upon completion of the LCES Workshop participants will:

Effectively utilize lookouts, communications, escape routes, and safety zones during the field operations.

Conduct interactive briefings that address LCES.

Evaluate and re-evaluate their, or other's situation, and orally or otherwise, initiate or question LCES mitigation.

Supervisors will:

Respond to subordinate's concerns regarding LCES issues in ways that are positive and supportive.

Everyone who has attended the LCES Workshop will:

Have practiced questioning assignments and situations in a manner that seeks solutions to the original tactical objectives.

Demonstrate safe work practices/behaviors as outlined in their LCES contract.

These operational objectives are ultimate goals which must be observed in the field and cannot be measured in the classroom.

2. Unit Objectives

Unit 1

In five to eight person table groups trainees will:

- 1. Arrange the individual elements (strips) from the **Orders**, **Situations**, **Guidelines**, and **Denominators** under the L, C, E, and S heading which best restates or mitigates them.
- 2. Discuss how LCES organizes the <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u>, and <u>Denominators</u> making them more useful in the field.

Unit 2

In five to eight person table groups trainees will:

- 1. Make a list of characteristics, operations, equipment and standards for an L, C, E, or S element.
- 2. As a whole class, render from the lists presented by small groups, a contract, achieved by class consensus. THIS IS THE SERVICE WE AGREE TO PROVIDE EACH OTHER.

Unit 3

In scenario exersises, trainees will:

- 1. Demonstrate the ability to evaluate hazardous operations and practice application of their LCES contract.
- 2. Trainees will demonstrate the ability to question assignments in manner that seeks a solution to the original tactical objectives.
- 3. Solutions will be reviewed by the class and instructors.

VI. Facilities

A classroom organized into table groups of five to six is ideal. The size of the class will determine the size of the room. This program has been conducted in auditoriums without tables, and has been successful.

Tables should be arranged so participants face the screen.

VII. Training and Materials

Units 1 and 2 require an overhead projector, laptop computer, printer, video projector and access to a copy machine.

Most scenarios (Unit 3) will require a slide projector; however additional scenarios may require other audio visual equipment.

Provide one table tent name card for each table with table numbers on the outside, and an L, C, E, or S on the inside. Tables 1, 5, and 9 will be "L" tables; Tables 2, 6, and 10 will be "C" tables; etc. Table groups will reverse their table tents at the beginning of Unit 2 for their assigned task.

Provide one roll of transparent tape (or glue stick) and a pair of scissors for each table group.

Photocopying will be required for preparation and at the conslucion of the class for distribution of the final contract.

VIII. Time Line

Units 1 and 2 last from five to eight hours. Unit 3 scenarios last from one hour to over two hours each.

One Month Before Course:

Reserve room and equipment.

Order <u>"Findings from the Wildland Firefighter Human Factors Workshop"</u> (9551-2855-MTDC) books.

Arrange for a "Scribe" as described in Unit 2.

One Week Before Course

Photocopy handouts. Photocopy <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u>, and <u>Denominators</u> (01-01-LCES-HO through 01-04-LCES-HO) on white paper. Photocopy 01-05 through 01-09-LCES-HO on a second color paper. Photocopy Unit 2's 02-01-LCES-HO through 02-04-LCES-HO on a third color paper.

One Day Before Course

Set up room, table tent cards, check projectors etc.

IX. Appendices

Appendix A - Handout Masters. All the handout materials are for small groups, and only one set per table is required. In addition, the <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u>, and <u>Denominators</u> are to be cut with scissors into individual elements (strips). Safety guidelines from other risk operations may be added to or substituted for these elements.

Appendix B - Viewgraph Masters.

Appendix C - Instructor References, Techniques, and Sample Contracts. Available only as a reference, the sample contracts are typical of workshop products. A brief history of LCES and the Workshop is also included.

Appendix D - Scenario Exercises. Slides and video tape are to support the scenario exercises. Trainee groups are to analyze each situation, identify the hazards, and plan a solution to the hazard. <u>Emphasis is on risk management</u> more than the tactical objective.

Appendix E - Course evaluation.

COURSE: LCES Workshop

UNIT: 1 - Focusing on LCES

SUGGESTED TIME: 1 1/2 Hours

TRAINING AIDS: Laptop computer, video projector, printer (or viewgraphs)

Handouts with Safety Elements

Scissors

Tape or glue stick Numbered table tents

OBJECTIVES: In five to six person table groups trainees will:

1. Arrange the individual elements (stips) from the **Orders**, **Situations**, **Guidelines**, and **Denominators** under the L, C, E, or S heading which best restates or mitigates those elements.

2. Discuss how LCES organizes the <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u>, and <u>Denominators</u> making them more useful in the field.

OUTLINE	AIDS & CUES
Organize class into table groups of five to six	TABLE TENT LABELS
people.	TABLES 1, 5, 9 WILL
	HAVE AN "L" ON THE
Levels of experience, areas of expertise, and duty	BACKSIDE. 2, 6, 10
stations are to be divided as evenly as possible among	WILL HAVE A " C" ON
the tables.	THE BACKSIDE, 3,7,
	11 WILL HAVE AN "E",
Counting off is effective, however balance must be	4, 8, 12 ETC. WILL
quickly verified.	HAVE AN "S" ON THE
•	BACKSIDE.

		OUTLINE	AIDS & CUES
I.	INTI A.	Discuss the history of LCES including the Dude Fire, Paul Gleason, South Canyon Fire, and Ted Putnam. Briefly describe the problems of too many rules to keep clear, and that this exercise will see if LCES does indeed restate or mitigate most of the Orders , Situations , Guidelines , and Denominators . Read the brief history of LCES from the Preface and Introduction.	01-01 THROUGH 01-09 LCES-VG 01-01-LCES-IR 01-02-LCES-IR
II.	(01-0 table Ordo Deno (01-0 will o	Discuss the objectives. a group is to spread the five handout pages 55 THROUGH 01-09-LCES-HO) across the b. A group member slices an element from the bers, Situations, Guidelines, and bominators and reads it to the group. 51 THROUGH 01-04- LCES-HO). The group bediscuss each element and determine if best fits ber L, C, E, or S.	01-01 THROUGH 01-09 LCES-HO
III.	the a elem mem one p on the Althorough this i	e a consensus is achieved, tape each strip on appropriate page, and move on to the next tent, sliced and read by the next group aber. If an element belongs on more than page, simply write it (or a reference number) are additional page(s). Tough you the instructor understand the simple redures of Units 1 and 2, for most participants as the first time. A slow demonstration of how orks is helpful at the beginning of each section.	TRANSPARENT TAPE SCISSORS

OUTLINE AIDS & CUES

The instructor should circulate around the room and help each group get started. Once people get the idea, you only need to stay available.

In Unit 1, people sometimes do not realize they need to continue on to the <u>Situations</u>, the <u>Guidelines</u>, and the <u>Denominators</u>. Pay attention to each group's progress and be there to see that they move on to the next page.

About half way through the session, interrupt the group with this acid test. "What you are telling me is when you do a good job with L, C, E, and S you are meeting, exceeding, or mitigating the elements you have taped on the appropriate page."

Monitor progress and give a heads up when a natural completion time is appropriate. Some groups may be done and another just on Situation #13. Advise those tables when they are falling behind.

THERE IS NO ONE CORRECT ANSWER.

IV. Whole Class Discussion: Briefly review the findings in general terms. Choose two or three elements and ask two or three tables how they handled it. For example, the situation "taking a nap near the fireline" one group may say this is a "Lookout" item because you must provide a lookout for anyone napping. A second group may say this is clearly a "Communications" issue because you cannot communicate with a sleeping person. A third table may place it in two or more pages and a fourth table may say there should be no napping on the fireline.

OUTLINE	AIDS & CUES
Remember the purpose of this exercise is to review Orders , Situations , etc. and engage participants in discussion.	
Discuss how LCES helps organize the elements and make them more accessible to the individual.	
Complete Unit 1 with the mitigation viewgraph series and discussion.	01-07 THROUGH LCES-VG
When finished, these sheets will no longer be used	

COURSE: LCES Workshop

UNIT: Unit 2 - Developing the LCES Contract

SUGGESTED TIME: 2 1/2 Hours

TRAINING AIDS: Laptop Computer, Printer, Video Projector (or viewgraphs)

Handouts

School Book Answers

A "Scribe"

OBJECTIVES: 1. In the same small groups as Unit 1, trainees will brain

storm a list of characteristics, operations, equipment

and standards for an L, C, E, or S element.

2. As a whole class, render from the lists presented by small groups, a contract, achieved by class consensus.

THIS IS THE SERVICE WE AGREE TO

PROVIDE EACH OTHER.

	OUTLINE	AIDS & CUES
I.		Reverse the table tent labels to indicate L, C, E, or S tables. 02-01-LCES-VG 02-02-LCES-VG

OUTLINE AIDS & CUES Emphasize the importance of new firefighter's A. scrutiny and insight. Those of us who have worked at this for years may not question some of the basic assumptions. Discuss the development of our safety awareness, 02-03-LCES-VG В. where the optimal situation exists, and how we can take rule making too far. C. Elements should be observable and measurable. II. SMALL GROUPS A. Discuss the Lookout, Communication, Escape Route or Safety Zone factor, as assigned and list the duties, responsibilities, techniques, equipment and precautions for effective field operations. This portion takes about 45 minutes. If presenting the workshop to a small group, in Unit 2, consider assigning more than one element to each table. For example, if 20 people are seated in four tables of five people, have Table 1 work on L and E, Table 2 work on C and S, Table 3 workson E and L, and Table 4 work on S and C. With extremely small groups, say ten people in two groups of five, each group can work on all four elements. This tactic is important to guarantee

varied and diverse input and discussion from

around the room as we build a contract.

		OUTLINE	AIDS & CUES
III.	CLASSROOM - BUILDING THE CONTRACT		
	A.	The Scribe needs to be briefed prior to Unit 2.	
	В.	Introduce the Scribe and the Scribe's role. As we work through L, C, E, and S, each group reads their next best item. The Scribe will type each agreed on element of the contract. As each item is typed, it appears on the screen for all class members to see.	LAPTOP COMPUTER VIDEO PROJECTOR
		It is common to revisit and edit, combine or eliminate items as the group achieves consensus.	
		Character can be added to the document with an attactive heading and appropriate graphics. These additions may identify the group, the place, and the date of the workshop. These additions can be done prior to the workshop.	
	C.	Contract Guidelines.	
		Several contracts from previous workshops are included in the Instructor Reference, Appendix C as well as "School Book" answers.	
		Trainees must be cautioned to include items that can be applied on every incident, every time. It is tempting to include items that require specialized equipment or resources. The goal of this course is ingrain consistant application of the basics.	

OUTLINE AIDS & CUES

In the documentary describing the Mormons journey to Utah, Brigham Young is quoted as saying "We will make no rule that we cannot keep."

In "Findings from the Wildland Firefighter's Human Factors Workshop" Dr. Curt Braun reminds us that the rules fail to protect us when we practice breaking them.

Our goal is to create a document that we agree to and commit to practicing every item, to the letter, every time. Therefore, it is important that we edit our contract so we can practice and build on success.

As an example of a typical process, often times a small group will enter the need for the lookout to have binoculars. Another class member or the facilitator will ask the question "does that mean if don't have binoculars we can't post a lookout?" The class will usually come up with verbage that makes items like binoculars "recommended" or "desirable" but not "required."

Furthermore, if the group believes items such as binoculars would be useful in the field but are not available, then they need to respectfully raise that item as a procurement priority.

COMMUNICATIONS

Communications presents a unique opportunity. Firefighters are less likely to be familiar with the important material presented in the <u>Findings from the Wildland Firefighters Human Factors Workshop</u> from which the viewgraphs are prepared. Instructors are encouraged to re-read, and encourage trainees to read.

	OUTLINE	AIDS & CUES
	Before beginning the whole class contract work on communications. Present a short lecture utilizing the viewgraphs. Finish this presentation with the "Listening" viewgraphs.	02-04 to 15- LCES-VG
IV.	Finalizing the contact. When a consensus has been achieved for L, C, E, and S, the Scribe will print the contract, copy and distribute.	PRINTER COPIER
V.	In closing Unit 2, empahsize this is a fluid process and may be reviewed and amended next season. However, the class, having written the contract, needs to be totally committed to successful implementation in order to achieve this self directed level of excellence.	
	Ask the class what measures supervisors/management should take to help firefighters live up to these self described standards of excellence. (Findings from the Wildland Firefighters Human Factors Workshop, Appendix D, Dr. Curt Braun "Feed Back and Reinforcement").	
	"Practice Success"	

COURSE: LCES Workshop

UNIT: Unit 3, Introduction to Scenario Exercises

LESSON: A - Analysis of Scenarios

SUGGESTED TIME: Depending on complexity, 1 1/2 to over 2 hours each

TRAINING AIDS: As described in each scenario

OBJECTIVES: In scenario exercises, trainees will:

- 1. Demonstrate the ability to evaluate hazardous operations and practice application of their LCES contract.
- 2. Trainees will demonstrate the ability to question assignments in a manner that seeks a solution to the original tactical objectives.
- 3. Solutions will be reviewed by the class and instructors.

	OUTLINE	AIDS & CUES
I.	INTRODUCTION. Trainees, in table groups, will receive information describing situations faced in the field scenarios. Each group will discuss the situation, identify and evaluate hazards, and using their LCES Contracts, describe an operation that safely meets the tactical objectives. If Unit 3 is presented in annual rotation with Standards for Survival and LCES Workshop Units 1 and 2, be careful to begin Unit 3 with Lesson B, the additional Orders, Situations, Guidelines, and Denominators review (approximately one hourincluded at the end of Unit 3).	03-01-LCES-VG

	OUTLINE		AIDS & CUES	
	crea	iew and "pencil in" updates of the "Contract" ited the previous year. In addition, Fire Shelter bloyment must accompany Unit 3.		
II.	Proc	cess		
	A.	ICS 204 "Division Assignment Lists" are available and need to be introduced.	03-01-LCES-HO	
	В.	The scenarios included in the course package address many common hazards encountered during wildland fire suppression; however, they do not cover all wildland fire situations, and do not attempt to cover other risks.		
		Encourage development of local "libraries" that include diverse scenario exercises.		
	C.	The first Scenario Exercise ("A"), deals with common initial attack situations from the smokejumper perspective. The situation is not generic, realizing all firefighters, whether helitack, hotshots, engine crews, etc. will easily identify and relate to hazards common to all. It is meant to increase understanding of the smokejumper mission. In this light, additional scenarios written by specific groups in unique fuel types and geography will add to field mutual understanding and respect.		

COURSE: LCES Workshop

UNIT: Unit 3 - Scenario Exercises

LESSON: B. - Orders, Situations, Guidelines and Denominators

Review

SUGGESTED TIME: One Hour

TRAINING AIDS: As described in each scenario

OBJECTIVES: In scenario exercises, trainees will:

1. Participate in an annual review of the <u>Orders</u>, <u>Situations</u>, <u>Guidelines</u> and <u>Denominators</u>.

2. List from memory the 1<u>0 Standard Firefighting</u>
<u>Orders</u>, <u>18 Situations</u>, <u>Guidelines</u>, and
<u>Denominators</u>.

	OUTLINE	AIDS & CUES
A.	Divide class into table groups of five to six people as in Units 1 and 2.	01-06-LCES-VG
B.	Instruct groups to work together and list as many of the 10 Orders, 18 Situations, Guidelines, and Denominators they can remember.	
C.	After one-half hour, review as an entire class. Instructor will find the complete lists in Unit 1 course material.	01-01-LCES-HO 01-02-LCES-HO 01-03-LCES-HO 01-04-LCES-HO